

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

UTILITY PATENT APPLICATION FOR:
**CENTRALIZED BILLING CREDIT SYSTEM UTILIZING A
PREDETERMINED UNIT OF USAGE**

Inventor:

Craig R. WHITE

CENTRALIZED BILLING CREDIT SYSTEM UTILIZING A PREDETERMINED UNIT OF USAGE

5 TECHNICAL FIELD OF INVENTION

This invention relates to a network printing system and more particularly a billing mechanism for a network printing system that employs token credits as a measurement of printer device usage.

10 BACKGROUND OF THE INVENTION

The prior art is replete with methods for obtaining billing information in printer systems. For example, U.S. Pat. No. 3,974,363 discloses a programmable billing system for use in a stand-alone reproduction machine. The system provides means for counting reoccurring events and generating a weighted output value proportional to the billing value of the events. It is also known, as disclosed in U.S. Patent No. 5,305,199, to employ a single tracking system for monitoring inventories of supplies consumed by a network of reprographic machines. Furthermore, U.S. Pat. No. 6,216,113 B1 discloses a network administrator which stores data representing usage of selected printers and a decoder for validating a print job request and a billing account number. The print jobs are verified and billed to an individual or group account number.

A difficulty with the above described techniques is a lack of capability to charge individuals or groups of individuals for usage of the printers on the network. Another difficulty is the lack of a simple method to determine the measurement of the usage of the devices. For example, U.S. Pat. No. 6,216,113 B1 uses various counters and totalizers circuits which count and accumulate device usage information. The system requires at least one counter circuit for every possible operation of the device.

SUMMARY OF THE INVENTION

In one aspect, the invention is an electronic transaction recording system for accumulating data from printer devices comprising: a billing manager which controls the billing policies for each printer device, a billing system which accumulates information on the occurrence of predetermined events and generates an accounting of usage based on the accumulated information and associates the accounting of usage with a predetermined unit of usage, and a database for storing a user's account information in terms of the predetermined unit of usage. Also, the billing system periodically updates the user's account information and issues a bill to the user. Preferably, the predetermined unit of usage is a token. Also, the system may include an apparatus for associating a predetermined number of tokens for each predetermined event and receiving from each printer device the total number of predetermined events that took place at each printer device and determining the token charge and assigning the token charge to an account. Furthermore, the system may include a billing policies database, which includes billing policies for the printer devices such that each printer device uses at least one billing policy to determine the cost of each operation performed on the printer. The cost of the operation is preferably illustrated in tokens. Optionally, the system further comprises a mobile access unit coupled to the billing manager via the printer device. The mobile access unit can be a personal digital assistant, wireless telephone or mobile computer. The system may further comprise a user configuration unit coupled to the billing policies database for updating and configuring billing policies for new users. The billing manager may include at least one memory device and a processor. Also, the billing system can be either a back office billing system or an Internet Settlement Model. Furthermore, the user can authorize the charges before the document is printed and the user's identify is authenticated by the system by submitting user credentials.

In an another aspect, the invention is an electronic transaction recording system for accumulating data from printer devices comprising: a mobile access unit containing content which is to be printed, a printer device which receives the content from the mobile access unit and printing the content in response to a authorization process, a billing manager coupled to the printer device and the mobile access unit for determining the amount of printer usage and associating a predetermined amount of token values with the costs of printing, and a billing system for maintaining accounting records of user and associating user account information with